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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,434	09/20/2004	Emil Eduard Antonius Crujlsberg	TS1237US	5772
23632	7590	05/18/2006		
SHELL OIL COMPANY P O BOX 2463 HOUSTON, TX 772522463				
			EXAMINER BULLOCK, IN SUK C	
			ART UNIT 1764	PAPER NUMBER

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/502,434

Applicant(s)

CRUIJSBERG ET AL.

Examiner

In Suk Bullock

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gengler et al. (4,361,478) in view of Gosselink et al. (5,371,308).

The reference to Gengler et al. teaches a method for producing olefins by steam cracking naphtha feed in a cracking furnace comprising a convection zone and a radiation zone (col. 1, lines 18-34 and col. 3, lines 38-43). The feed is sent to a first heat exchanger and the heated feed is then sent to a second heat exchanger and is mixed with steam for further heating the mixture. The heated mixture is then super heated to the desired temperature for input to the cracking zone. See col. 1, lines 6-15; col. 3, line 59 to col. 4, line 11; and Figure 1.

The differences between Gengler et al. and the claimed invention are that the reference does not disclose the feed as Fischer-Tropsch hydrocarbons and nor does the reference disclose the specifically claimed ethene, propene and butene products.

The reference to Gosselink et al. teaches a process for producing lower olefins by thermal cracking of Fischer-Tropsch hydrocarbons in the presence of steam. Steam is present in an amount of from 20 to 100 parts by weight per 100 parts by weight of the hydrocarbon feed. The hydrocarbon feed has a boiling point range of from 30° to 350° C. See col. 2, lines 9-50 and col. 3, lines 3-10. The working examples in col. 8 and col. 9 show cracking of C₅₊ hydrocarbon to yield C₂-C₄ olefins.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Gengler et al. by cracking Fischer-Tropsch hydrocarbons specifically to obtain lower olefins because Gosselink et al. has disclosed that Fischer-Tropsch hydrocarbons may be thermally cracked with steam to produce ethylene, propylene, and butene.

It is acknowledged that Gengler et al. reference does not teach the claimed mixture of liquid and gaseous Fischer-Tropsch hydrocarbons in the second preheating zone. However, it is expected that when the feed of Gosselink et al. is utilized in the process of Gengler et al. the mixture in the second preheating zone of Gengler reference would be the same as the claimed mixture.

With respect to the claimed feed being essentially free of aromatic compounds, nitrogen compounds and/or sulfur compounds, these compounds are well known to be poisonous to catalysts. It is well known in the art to remove deleterious components such as nitrogen and sulfur compounds from a hydrocarbon feed prior to desired hydrocarbon conversion processes.

Response to Arguments

Applicant's arguments filed March 3, 2006 have been fully considered but they are not persuasive.

The argument that the Gengler reference would require a different furnace configuration when used to process feed, such as gas oil, other than naphtha is not persuasive because the only difference between processing naphtha and gas oil is the position of the valves 16 and 19 (see specifically col. 4, lines 28-36). Thus, there is no change in the configuration of the furnace when going from processing naphtha to other feed such as gas oil.

The argument that the furnace configuration of Gengler would not be expected to process Fischer-Tropsch hydrocarbons having higher boiling point than naphtha without

excessive coke formation is not persuasive because the naphtha feed disclosed by Gengler includes both light and heavy hydrocarbons and, therefore, would include the hydrocarbons having the claimed boiling point range. Additionally, Gengler discloses processing gas oil, which would have a boiling point range including the claimed range, using the same furnace configuration as for naphtha.

The argument that the Gosselink reference does not disclose or suggest using conventional naphtha designed steam cracking process to process heavy hydrocarbons is not persuasive because the reference was relied upon to supply the source of heavy hydrocarbons, namely Fischer-Tropsch synthesis.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

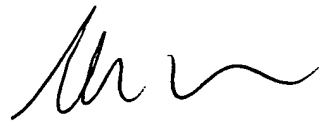
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is 571-272-5954. The examiner can normally be reached on Monday - Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

J. Bullock
I.B.


Glenn Caldarola
Supervisory Patent Examiner
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